STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT KENTUCKY 40601
www.kentucky.gov

January 28, 2011

Northern KY Sanitation District No. 1
Attn: Brandon Vatter, Director of Planning and Design
1045 Eaton Dr
Ft. Wright, KY 41017

RE: Northern KY Sanitation District No. 1
AI # 2449
Kentucky Aire Pump Station Elimination

Dear Mr. Vatter:

Thank you for submitting a Green Project Reserve (GPR) business case for your proposed project, funded through the Clean Water State Revolving Fund (CWSRF). A provision of the 2011, CWSRF funding cycle requires that to the extent there are eligible project applications; states shall use 20% of its Clean Water State Revolving Fund capitalization grant for green infrastructure projects. These projects are intended to address water and energy efficiency improvements or other environmentally innovative activities. The Kentucky Division of Water (KY DOW) has reviewed the GPR business case for the Kentucky Aire Pump Station Elimination, and has found the justification to be acceptable. If the scope of the project is altered in any way to exclude the GPR eligible components, the Northern KY Sanitation District No. 1 shall submit the changes in writing to the KY DOW and receive prior approval in writing before proceeding with construction.

We look forward to working with you in finalizing your wastewater infrastructure project. If you have any questions regarding this correspondence, please contact me at (502) 564-3410, ext 4832.

Sincerely,

Greg Goode, P.E.
Kentucky Division of Water

Cc: Jim Turner, SD1
CWSRF File

new

GREEN COMPONENT SUPPLEMENT TO THE 2011 CWSRF AND DWSRF CALL FOR PROJECTS

During the 2011 Call for Projects held October 2009 through March 2010, the below referenced project was identified as "green" or included "green" components. In order to determine the green costs and whether or not the project is considered categorically green or whether a business case will be required, the Division of Water needs additional information.

Attached to this email is the current Green Guidance for the 2011 funding cycle. Green projects are classified as projects that address: Water Efficiency, Energy Efficiency, Green Infrastructure or Environmentally Innovative Activities. The guidance discusses each of these categories and the components or types of projects that would require a business case versus a classification of categorically green.

Please review the attached guidance and complete the below information. **In order for green merits of the project to be included as such on the 2011 Priority List, this form must be completed and returned via email to Division of Water no later than May 17, 2010.** Questions or completed forms should be submitted to the Division of Water contacts noted below:

Clean Water SRF	Drinking Water SRF
Anshu Singh	Amanda Yeary
Anshu.singh@ky.gov	Amanda.yeary@ky.gov
502-564-3410 ext. 4805	502-564-3410 ext. 4839

Note: An itemized list of components and their related costs are all that is required at this time.

Applicant (Must be governmental entity): Sanitation District No. 1

Project Name: Kentucky Aire Pump Station Elimination

WX / SX Number (required): SX-21015206

Please provide contact information for questions relating to this form only:

Contact Name: Brandon C. Vatter
Email: bvatter@sd1.org
Telephone: 859-578-6756

1) Based on the attached guidance, do you consider your project a 100% green project?

Yes _____ No X

2) Based on the attached guidance, please categorize your green components into the identified categories and provide a listing of the green components and an estimation of related costs at this time:

a. Water Efficiency $\_\_\_\_0\_\_\_\_\_$ (total)

Breakdown of components included with related costs:

Component	Cost

b. Energy Efficiency $ 3,012,155 (total)

Breakdown of components included with related costs:

Component	Cost
1. Gravity sewer to connect to KY Aire PS to Frogtown sewer and eliminate pump station	$3,012,155

c. Green Infrastructure $\_\_\_\_0\_\_\_\_\_$ (total)

Breakdown of components included with related costs:

Component	Cost

d. Environmentally Innovative Activities

Breakdown of components included with related costs:

Component	Cost

3) Total Project Cost related to "green" components (all categories): $ 1,600,000

Business Case for Kentucky Aire Pump Station Elimination Project

During large wet weather events when the capacity of the Kentucky Aire pump station is exceeded, the pump station overflows into a small creek that is tributary to the South Fork Gunpowder Creek. As part of the analysis to eliminate this pump station overflow, the following alternatives were evaluated:

- Increased pumping capacity,
- Wet weather equalization storage at the pump station, and
- Gravity conveyance.

A potential solution to overflows at Kentucky Aire is to increase the pumping capacity of the station. However, the downstream capacity within the Southern Kenton County (SKC) gravity sewer is limited and, unless the conveyance capacity of this system is increased, a capacity upgrade at the Kentucky Aire PS is not viable as it would increase downstream overflows.

The use of wet weather equalization storage at the Kentucky Aire PS site is another possible solution. While wet weather storage would control the overflows at Kentucky Aire and is capable of keeping peak flows from entering the SKC system, this option does fully alleviate the hydraulic capacity issues in the SKC system and at another pump station that is located further downstream, Lakeview.

The Frogtown Sewer project, which will begin construction in 2011, provides a means of redirecting flows from the Kentucky Aire Pump Station away from the SKC system and into the Western Regional system. This redirection of flow would require a new gravity sewer to be constructed between the Kentucky Aire pump station and the new Frogtown sewer alignment.

The alternative analysis indicated that the preferred alternative is the elimination of the Kentucky Aire PS by a gravity sewer connection to the Frogtown sewer. In addition to the elimination of overflows at the Kentucky Aire pump station, this approach includes the following benefits:

- Eliminates a pump station and its associated operation and maintenance costs, including energy consumption,
- Will reduce the downstream SKC overflow problem by diverting a significant amount of wet weather flow to the Western Regional system, and
- Maximizes the potential of sending more flow to the Western Regional Wastewater Reclamation Facility (expected to begin service in early 2012).

The proposed alignment for this proposed sewer between Kentucky Aire and the Frogtown Sewer includes approximately 3,300 linear feet of 18" pipe. Approximately 500 feet of this pipe will be constructed using trenchless technology to span I-71/I-75.

SD1 conducted an analysis to assess the feasibility and potential cost-effectiveness of control through conveyance versus pump station capacity upgrades to eliminate the Kentucky Aire pump station overflow. The results are summarized in the table on the next page:

Kentucky Aire Pump Station Elimination	Pump Station Upgrade	Conveyance to Frogtown Sewer
Conveyance	$0	$3.8
Pump Station Upgrade	$6.5	$0
Total Capital Cost	**$6.5**	**$3.8**
Present Worth – O&M *	$1.8	$0.2
Total Present Worth Cost	**$8.3**	**$4.0**

*O&M costs are sum of costs over a 25-year period in 2009 dollars.

The conveyance to the Frogtown sewer option eliminates the local SSOs in a typical year whereas the pump station upgrade simply increases the flow downstream, resulting in an increase in downstream SSOs. Therefore, from a capital cost perspective, the conveyance option is more cost-effective because it results in no additional costs to eliminate SSOs whereas the pump station upgrade option would require more costs to be expended downstream to eliminate the same volume of overflows. A present worth cost analysis that includes capital expenditures as well as O&M shows that the gravity sewer option is still less costly than upgrading the pump station.

In addition to being less costly on both a capital cost and present worth basis, replacing the existing pump station with a gravity sewer results in a nearly 100% reduction in energy costs as the gravity system has no pumping and very little energy consumption associated with it. While there may be minor energy costs associated with infrequent inspection, the savings exceed the 20% threshold stipulated in the guidance documentation. As such, this project meets the requirements for Energy Efficiency as defined in the Green Projects guidance for determining project eligibility.